I Claim:

1. A method of constructing a fluid storage tank comprising:

(I) assembling (i) two end section panel sets, each said end section panel set comprising a top end panel including a top end plate cover and one or more stiffeners or stringers, a bottom end panel including a bottom end plate cover and one or more stiffeners or stringers, and three side end panels, each said side end panel including a side end plate cover and one or more stiffeners or stringers, and (ii) a plurality of truss structures, each of said plurality of truss structures comprising:

(a) a plurality of both vertical, elongated supports and horizontal, elongated supports, connected at their respective ends to form a gridwork of structural members, and

(b) a plurality of additional support members secured within and between said connected vertical and horizontal, elongated supports to thereby form each said truss structure;

(II) loading said end section panel sets and said truss structures onto a transport vehicle;

(III) transporting said transport vehicle to a tank construction site;

(IV) unloading said end section panel sets and said truss structures off of said transport vehicle;

(V) joining said end section panel sets and said truss structures to form said fluid storage tank such that said fluid storage tank comprises: (i)

an internal, substantially rectangular-shaped truss frame structure, said internal, substantially rectangular-shaped truss frame structure comprising: (a) a first plurality of said truss structures positioned transversely and longitudinally-spaced from each other along the length direction of said internal, substantially rectangular-shaped truss frame structure and (b) a second plurality of said substantially rectangular-shaped truss structures positioned longitudinally and transversely-spaced from each other along the width direction of said internal, substantially rectangular-shaped truss frame structure, said first plurality of truss structures and said second plurality of truss structures interconnected at their points of intersection; (ii) a grillage of said stiffeners and said stringers arranged in a substantially orthogonal pattern, interconnected and attached to the external extremities of said internal truss frame structure such that when attached to vertical sides of the truss periphery, said stiffeners and stringers are in substantially the vertical and horizontal directions respectively, or in substantially the horizontal and vertical directions respectively, and (iii) a plate cover attached to the periphery of said grillage of stiffeners and stringers; all such that said tank is capable of storing fluids at substantially atmospheric pressure and said plate cover is adapted to contain said fluids and to transfer local loads caused by contact of said plate cover with said contained fluids to said grillage of stiffeners and stringers, which in turn is adapted to transfer said local loads to said internal, substantially rectangular-shaped truss frame structure.

2. A method of constructing a fluid storage tank comprising:

(I) assembling (i) one or more mid section panel sets, each said mid section panel set comprising a top mid panel including a top mid plate cover and one or more stiffeners or stringers, a bottom mid panel

including a bottom mid plate cover and one or more stiffeners or stringers, and two side mid panels, each said side mid panel including a side mid plate cover and one or more stiffeners or stringers, (ii) two end section panel sets, each said end section panel set comprising a top end panel including a top end plate cover and one or more stiffeners or stringers, a bottom end panel including a bottom end plate cover and one or more stiffeners or stringers, and three side end panels, each said side end panel including a side end plate cover and one or more stiffeners or stringers; and (iii) a plurality of truss structures, each of said plurality of truss structures comprising:

(a) a plurality of both vertical, elongated supports and horizontal, elongated supports, connected at their respective ends to form a gridwork of structural members, and

(b) a plurality of additional support members secured within and between said connected vertical and horizontal, elongated supports to thereby form each said truss structure;

(II) loading said mid section panel sets, said end section panel sets, and said truss structures onto a transport vehicle;

(III) transporting said transport vehicle to a tank construction site;

(IV) unloading said mid section panel sets, said end section panel sets, and said truss structures off of said transport vehicle;

(V) joining said mid section panel sets, said end section panel sets, and said truss structures to form said fluid storage tank such that said fluid storage tank comprises: (i) an internal, substantially

rectangular-shaped truss frame structure, said internal, substantially rectangular-shaped truss frame structure comprising: (a) a first plurality of said truss structures positioned transversely and longitudinally-spaced from each other along the length direction of said internal, substantially rectangular-shaped truss frame structure and (b) a second plurality of said truss structures positioned longitudinally and transversely-spaced from each other along the width direction of said internal, substantially rectangular-shaped truss frame structure, said first plurality of truss structures and said second plurality of truss structures interconnected at their points of intersection; (ii) a grillage of said stiffeners and said stringers arranged in a substantially orthogonal pattern, interconnected and attached to the external extremities of said internal truss frame structure such that when attached to vertical sides of the truss periphery, said stiffeners and stringers are in substantially the vertical and horizontal directions respectively, or in substantially the horizontal and vertical directions respectively, and (iii) a plate cover attached to the periphery of said grillage of stiffeners and stringers; all such that said tank is capable of storing fluids at substantially atmospheric pressure and said plate cover is adapted to contain said fluids and to transfer local loads caused by contact of said plate cover with said contained fluids to said grillage of stiffeners and stringers, which in turn is adapted to transfer said local loads to said internal, substantially rectangular-shaped truss frame structure.

3. The method of claim 2 wherein said top mid plate cover is comprised of a plurality of joined steel plates.

4. A method of constructing a fluid storage tank comprising:

(A) providing a plurality of plates, a plurality of stiffeners and stringers, and a plurality of first truss frame structure elements;

(B) forming a plate cover from one or more of said plurality of plates;

(C) joining a portion of said plurality of stiffeners and stringers to a first side of said plate cover; and

(D) joining a portion of said plurality of first truss frame structure elements to said first side of said plate cover, thereby forming a panel element, said panel element including a first portion of an internal truss frame.

5. The method of claim 4, further comprising:

(E) repeating steps (B) through (D) to form a plurality of panel elements.

6. The method of claim 5, further comprising:

(F) forming a plurality of tank modules from said plurality of panel elements.

7. The method of claim 5, further comprising:

(F) transporting said plurality of panel elements from a first location to a second location; and

(G) assembling said plurality of panel elements to form a fluid storage tank.

8. The method of claim 6, further comprising:

G) transporting said plurality of tank modules from a first location to a second location; and

(H) assembling said plurality of tank modules to form a fluid storage tank.

9. The method of claim 7, further comprising:

(H) providing a plurality of second truss frame structure elements to said second location;

wherein said assembling step (G) further includes assembling said plurality of second truss frame structure elements to form the interior truss members of said internal truss frame.

10. The method of claim 9, wherein said assembling step (G) includes forming a fluid storage tank having a tank top, a tank bottom, two tank side walls, and two tank end walls, said tank comprising:

(I) an internal, substantially rectangular-shaped truss frame structure, said internal, substantially rectangular-shaped truss frame structure comprising:

(i) a first plurality of truss structures extending transversely and longitudinally-spaced from each other along the length direction of said internal truss frame structure such that said first plurality of truss structures are (a) spaced from said two tank end walls and (b) in contact with said tank top, said tank bottom, and said two tank side walls; and (ii) a second plurality of truss structures extending longitudinally and transversely-spaced from each other along the width direction of said internal truss frame

structure such that said second plurality of truss structures are (a) spaced from said two tank side walls and (b) in contact with said two tank end walls, said tank top, and said tank bottom; said first plurality of truss structures and said second plurality of truss structures being interconnected at their points of intersection and each of said first and second plurality of truss structures comprising:

(a) a plurality of both vertical, elongated supports and horizontal, elongated supports, connected to form a gridwork of structural members with a closed outer periphery, and

(b) a plurality of additional support members secured within and between said connected vertical and horizontal, elongated supports to thereby form each said truss structure;

(II) a plurality of stiffeners and stringers arranged in a substantially orthogonal pattern, interconnected and attached to the external extremities of said internal, substantially rectangular-shaped truss frame structure such that when attached to vertical sides of said internal, substantially rectangular-shaped truss frame structure periphery, the stiffeners and stringers are in substantially the vertical and horizontal directions respectively, or in substantially the horizontal and vertical directions respectively, and

(III) a plate cover attached to the periphery of said plurality of stiffeners and stringers;

all such that said tank is capable of storing fluids at substantially atmospheric pressure and said plate cover is adapted to contain said fluids and to transfer local loads caused by contact of said plate cover with said contained fluids to said plurality of stiffeners and stringers, which in turn is adapted to transfer said local loads to said internal, substantially rectangular-shaped truss frame structure.

11. A method as claimed in claim 10, wherein said repeating step (E) includes forming a plurality of top panels, a plurality of side panels and a plurality of bottom panels.

12. A method as claimed in claim 11, wherein said assembling step (G) includes joining one said bottom panel to first ends of two said side panels, joining one said top panel to second ends of said two side panels, thereby forming a tank mid-section module comprising a portion of said internal truss frame.

13. The method of claim 8, further comprising:

(I) providing a plurality of second truss frame structure elements to said second location;

wherein said assembling step (H) further includes assembling said plurality of second truss frame structure elements to form the interior truss members of said internal truss frame.

14. The method of claim 13, wherein said assembling step (H) includes forming a fluid storage tank having a tank top, a tank bottom, two tank side walls, and two tank end walls, said tank comprising:

(l) an internal, substantially rectangular-shaped truss frame structure, said internal, substantially rectangular-shaped truss frame structure comprising:

(i) a first plurality of truss structures extending transversely and longitudinally-spaced from each other along the length direction of said internal truss frame structure such that said first plurality of truss structures are (a) spaced from said two tank end walls and (b) in contact with said tank top, said tank bottom, and said two tank side walls; and (ii) a second plurality of truss structures extending longitudinally and transversely-spaced from each other along the width direction of said internal truss frame structure such that said second plurality of truss structures are (a) spaced from said two tank side walls and (b) in contact with said two tank end walls, said tank top, and said tank bottom; said first plurality of truss structures and said second plurality of truss structures being interconnected at their points of intersection and each of said first and second plurality of truss structures comprising:

(a) a plurality of both vertical, elongated supports and horizontal, elongated supports, connected to form a gridwork of structural members with a closed outer periphery, and

(b) a plurality of additional support members secured within and between said connected vertical and horizontal, elongated supports to thereby form each said truss structure;

(II) a plurality of stiffeners and stringers arranged in a substantially orthogonal pattern, interconnected and attached to the external extremities of said internal, substantially rectangular-shaped truss frame structure such that when attached to vertical sides of said internal, substantially rectangular-shaped truss frame structure periphery, the stiffeners and stringers are in substantially the vertical and horizontal directions respectively, or in substantially the horizontal and vertical directions respectively, and

(III) a plate cover attached to the periphery of said plurality of stiffeners and stringers;

all such that said tank is capable of storing fluids at substantially atmospheric pressure and said plate cover is adapted to contain said fluids and to transfer local loads caused by contact of said plate cover with said contained fluids to said plurality of stiffeners and stringers, which in turn is adapted to transfer said local loads to said internal, substantially rectangular-shaped truss frame structure.

15. A method as claimed in claim 14, wherein said repeating step (E) includes forming a plurality of top panels, a plurality of side panels and a plurality of bottom panels.

16. A method as claimed in claim 15, wherein said forming step (F) includes forming tank mid section modules and tank end section modules.

17. A method as claimed in claim 16, wherein said forming step (F) includes joining one said bottom panel to first ends of two said side panels, joining one said top panel to second ends of said two side panels, thereby forming a tank mid-section module comprising a portion of said internal truss frame.